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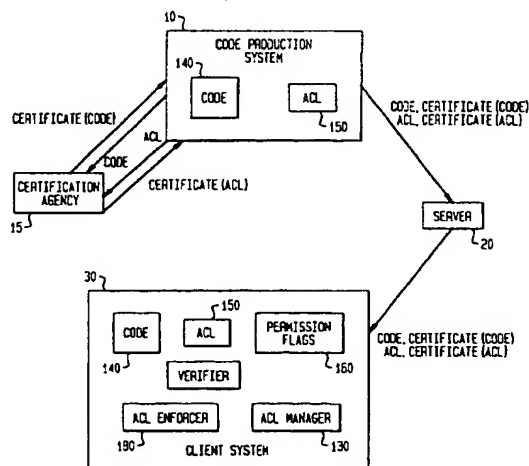
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(54) Support for trusted software distribution

(57) A form of authentication is provided wherein a trusted third party signs a certificate to identify the author of a program and to secure its integrity. The program code is encapsulated or otherwise associated with the certificate and an access control list (ACL). The access control list describes the permissions and resources required by the code. An enforcement mechanism which allocates system permissions and resources in accordance with the ACL. In a preferred embodiment, a code production system communicates with a certification agency, which is a trusted third party. The certification agency issues a certificate for the code and a certificate for the access list of that code. Once the certificate is issued it is not possible for any party to modify the code or access list without invalidating the certificate. The code and its ACL, along with their certificates are stored on a server. A client downloading the code or access list can verify the integrity of the code/access list and the system can enforce the access list such that the permissions and resources are not exceeded.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 97 30 3443

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 5 412 717 A (FISCHER ADDISON M) 2 May 1995 (1995-05-02)	1-6,8,9, 11,12 10	G06F1/00 G06F9/46 H04L29/06
Y	* column 1, line 19 - line 25 * * column 2, line 24 - line 48 * * column 3, line 53 - line 61 * * column 5, line 38 - line 50 * * column 6, line 19 - column 7, line 13 * * column 7, line 43 - line 46 * * column 8, line 45 - line 66 * * column 9, line 58 - line 63 * * figures 2,3D,7,8,9A,9B,11 *		
Y	DEAN D ET AL: "JAVA SECURITY: FROM HOTJAVA TO NETSCAPE AND BEYOND" PROCEEDINGS OF THE 1996 IEEE SYMPOSIUM ON SECURITY AND PRIVACY. OAKLAND, CA., MAY 6 - 8, 1996, PROCEEDINGS OF THE IEEE SYMPOSIUM ON SECURITY AND PRIVACY, LOS ALAMITOS, IEEE COMP. SOC. PRESS, US, vol. SYMP. 17, 6 May 1996 (1996-05-06), pages 190-200, XP000634844 ISBN: 0-7803-3527-9 * page 1 *	10	TECHNICAL FIELDS SEARCHED (Int.Cl.6) G06F
X,P	WO 97 07657 A (KNAUERHASE ROBERT C ;INTEL CORP (US); AUCSMITH DAVID W (US)) 6 March 1997 (1997-03-06) * column 1, line 22 - column 3, line 25 * * column 7, line 16 - column 9, line 17 * * claim 1 * * figures 6,7 *	1-5,8,9, 12	
A	US 5 210 872 A (FERGUSON EDWARD E ET AL) 11 May 1993 (1993-05-11) * the whole document *	7,13-17	
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 18 November 2002	Examiner Bichler, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons 8 : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.92 (P04C01)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-6, 8-12

Distributing program code in which a recipient system receives a trusted third party certification including a computer readable description of resources and permissions required for verified non-harmful operation of the program code

2. Claims: 7,13-17

Distributing program code in which a recipient system receives a trusted third party certification including a computer readable description of resources and permissions required for verified non-harmful operation of the program code in which the resource description includes data describing the maximum rate of consumption of each resource.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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18-11-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5412717	A	02-05-1995	AT 177857 T	15-04-1999
			AU 3820993 A	18-11-1993
			CA 2095087 A1	16-11-1993
			DE 69323926 D1	22-04-1999
			DE 69323926 T2	30-09-1999
			EP 0570123 A1	18-11-1993
			ES 2128393 T3	16-05-1999
			JP 6103058 A	15-04-1994
			US 5311591 A	10-05-1994
WO 9707657	A	06-03-1997	US 5757915 A	26-05-1998
			AU 6501196 A	19-03-1997
			BR 9610127 A	26-10-1999
			CN 1194072 A	23-09-1998
			EP 0860064 A2	26-08-1998
			IL 123198 A	14-06-2001
			JP 11511576 T	05-10-1999
			RU 2142674 C1	10-12-1999
			WO 9707657 A2	06-03-1997
US 5210872	A	11-05-1993	US 5940513 A	17-08-1999
			JP 6168143 A	14-06-1994